

# ON FORMALISM

CHAPTER 02  
NEXTGEN HOUSING RESEARCH





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March 2010

## CHAPTER 02

NEXTGEN HOUSING RESEARCH

# ON FORMALISM

# INTRO

Considering artworks & photography, does architecture follow the same rules of composition? Are proportion & geometry just as important, or even more so? What makes architecture visually interesting? What causes us to stare at a building for hours on end, questioning, admiring and critiquing it?

Is the form of a building the only aspect of it that is important? Can architecture get away with ignoring function as long as 'it looks good'?

What is the importance of deconstructivism and how is it impacting architecture? Is this a good or bad thing?

Are the explicit formalistic expressions of some modern buildings a valid response to traditional rules of architectural composition? Has this approach to design blurred the line drawn between Art and Architecture?

For the purpose of this chapter, Architecture refers to carefully crafted buildings that have addressed all of the issues of function, construction, form, aesthetics, scale and all of the other elements that combine to create a building rather than merely a poorly thought out and constructed conglomerate of theories, geometry and technique.

There has been no specific ordering of this chapter in relation to the process of design of a building as the process of creating architecture is an extremely complex one, and never is a solution found on the first attempt. It is a response to recognising many problems and possibilities and combining the best elements of each to create the building.

## VISUAL INTEREST

### THE ART OF 2D COMPOSITION

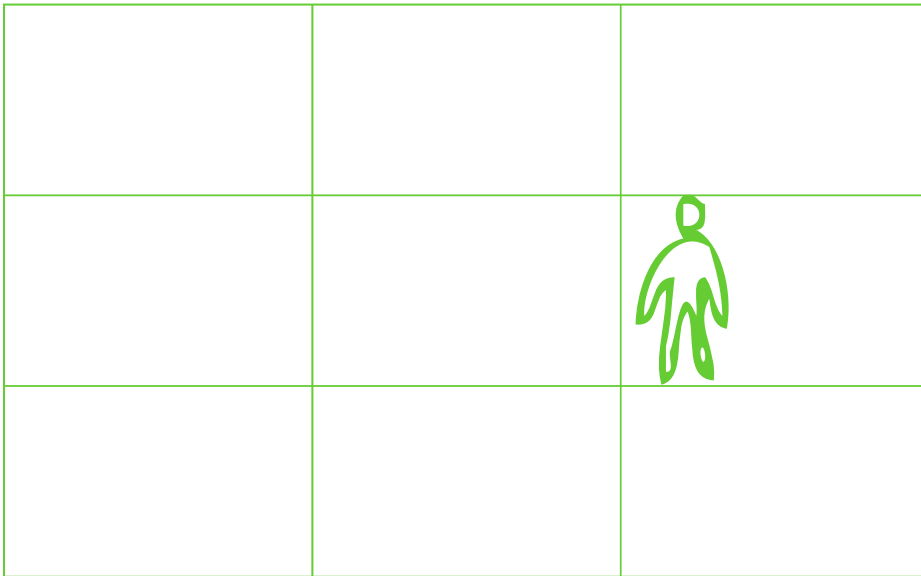
In an attempt to answer the proposed questions, one must first understand where architecture has come from.

For as long as artwork has been around, so has our ability to judge it as to whether it is aesthetically pleasing or not. There is something intrinsically important to a piece that will determine whether it will be successful or not. That something is composition. Of course everyone's idea of what is visually interesting differs somewhat, but essentially the principles behind composition are the same.

There are various ways to compose an artwork or photograph, however the main goal of the composition is to achieve a sense of unity within the piece. There are several techniques used to achieve this unity. Many of which can be applied to architecture.

## RULE OF THIRDS

The objective of the rule of thirds is to stop the subjects and areas of interest from bisecting the image. This is achieved by placing them on or near one of the lines that would divide the image into three equal rows and columns.



## SIMPLIFICATION

Images with too much content may distract the viewer from the main focus of the image. Removing this clutter, the viewer is more likely to focus on the main subject. This principle can be applied to architecture where less can quite often equal more. Adolf Loos draws upon a similar theory in the essay "Ornament and Crime"

## GEOMETRY AND SYMMETRY

Within two-dimensional works, geometry and symmetry are important factors to consider. The way that objects are positioned in the image and the geometric shapes of the objects combine to increase the aesthetic appeal of the image.

Architecture follows a similar yet far more complex set of rules for composition.

As composition in an artwork or photograph is crucial to its success, so to is it crucial in the realm of architecture.

Architecture is the composition of all components of a building, including, but by no means limited to function, program, proportions, scale, geometry materials and construction. These elements all combine to create the form. Function, construction and form are factors of equal significance and jointly determine architecture

## FUNCTION & FORM

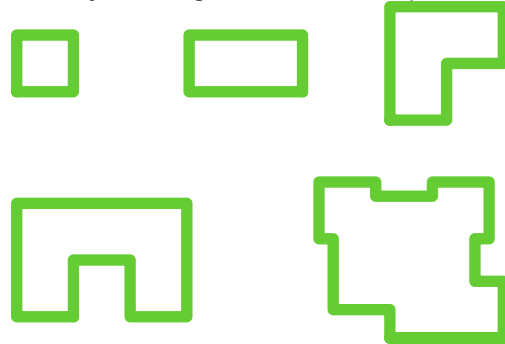
"The extent to which function influences architectural form becomes clear when we remind ourselves of the different uses of a building, and how certain activities can shape its form and function. The problem lies in the coordination of form and function. If this coordination cannot be mastered, the results are hollow forms and unsatisfactory living conditions"  
- Rob Krier

# FIRST PRINCIPLES

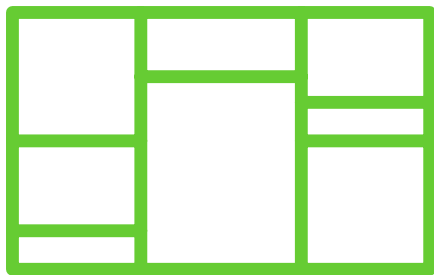
The permutations of type for a domestic plan are very limited. The three basic geometrical forms that can be developed into a plan are the square, triangle and circle.



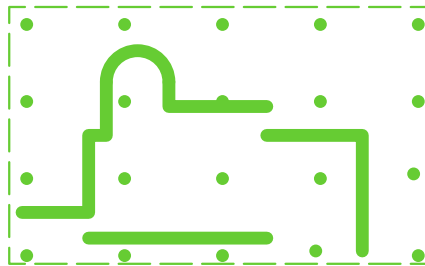
Each one of these basic forms can be combined, morphed and joined together to create a plan.



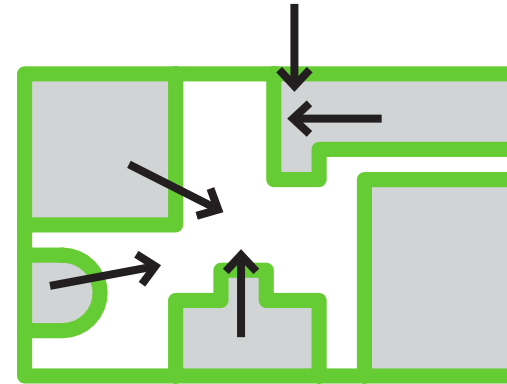
Each one of these shapes can go through manifold transformations.



Plan with autonomous cell like rooms



Open plan layouts are still a permutation of the three basic shapes.

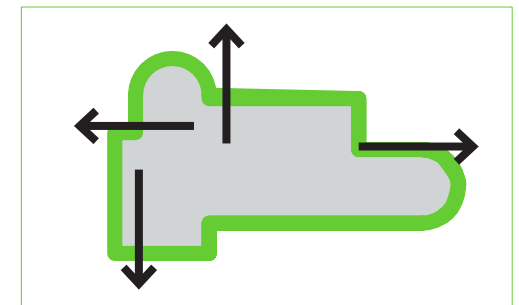


Inward

The organisation of a buildings' plan is either directed towards the centre, or towards the outside.

It is evident through these basic plans, that the design process can never be mathematically rationalised. It is more of a 'pulling together' of an entire aesthetic repertoire of geometries.

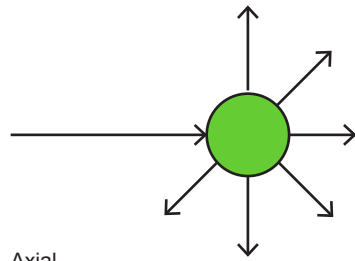
The same theme can be carried through the different basic geometries in regular and irregular form.



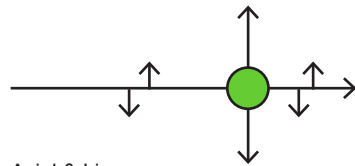
Outward

## ORGANISATION OF FUNCTION

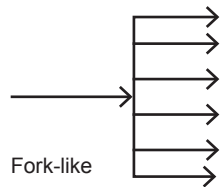
Orientation, and ease of circulation are important factors when designing the layout of a building and determining the location of each 'function'. Typically, there are seven organisational strategies.



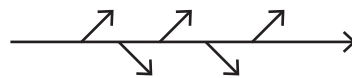
Axial



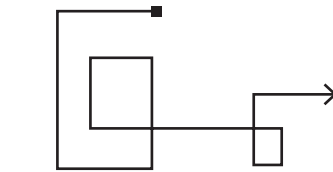
Axial & Linear



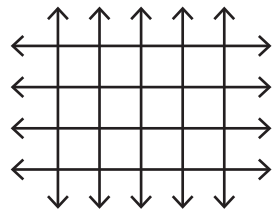
Fork-like



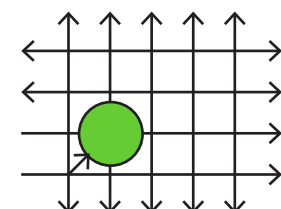
Linear



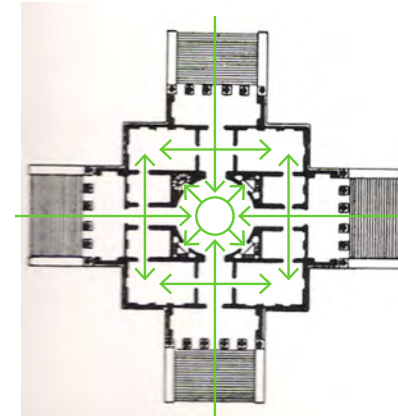
Labyrinth



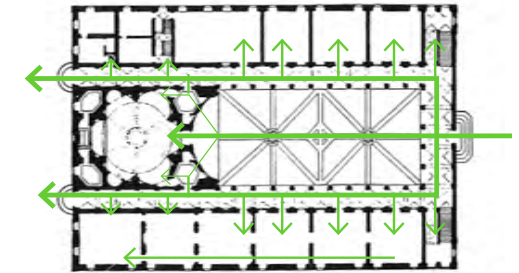
network



superimposition



La Rotunda – A. Palladio



Palazzo della Spienza – Borromini

Through these historical examples, it is evident that the overlaying of separate systems combines to create a successful building

## CONSTRUCTION AND FORM

"Neither construction nor function can be isolated from the totality of architecture and [be] expected to exist in their own right. Construction is closely related to function. A clearly defined concept of spatial organisation demands an appropriate structural solution, the more harmonious this unity the closer one comes to the architectonic end product."

- Rob Krier

There are three principle types of construction, Massed, skeletal and mixed construction. The selection of construction methods and type play a great role in determining the end result of the buildings form.

Not only is the overall aesthetic appeal of a building affected by the material choice, the detailing of the building components and the materials also effect connections between elements. Critical to the aesthetic form of the structure is the connection details between the parts of the building. If the transitions are too big and clunky, the eye can be thrown off thus creating a sense of clutter or visual noise that detracts from the architecture. It is a fine art to detail a building effectively.



# PROPORTION

“Proportion is a correspondence among the measures of the members of an entire work, and of the whole to a certain part selected as standard. From this result the principles of symmetry. Without symmetry and proportion there can be no principles in the design of any temple; that is, if there is no precise relation between its members as in the case of those of a well shaped man.”

-Vitruvius

Proportion is of particular significance when addressing formalism in architecture. Once the basic elements for a building have been selected, a suitable scale then has to be worked out which governs the dimensions of individual parts and their interrelationships. There is no one set of rules that can determine correct proportions, though many have attempted to create rules. Correct proportions for a building, or parts of a building are purely subjective. It relies on our experience of visual order to determine whether or not something is in proportion. All of the theories and rules that govern proportion are purely mathematical. Rules such as ‘the golden mean’, segmentation of a circle into parts are attempts to uncover the rules of proportion

## PROPORTION AND THE HUMAN SCALE

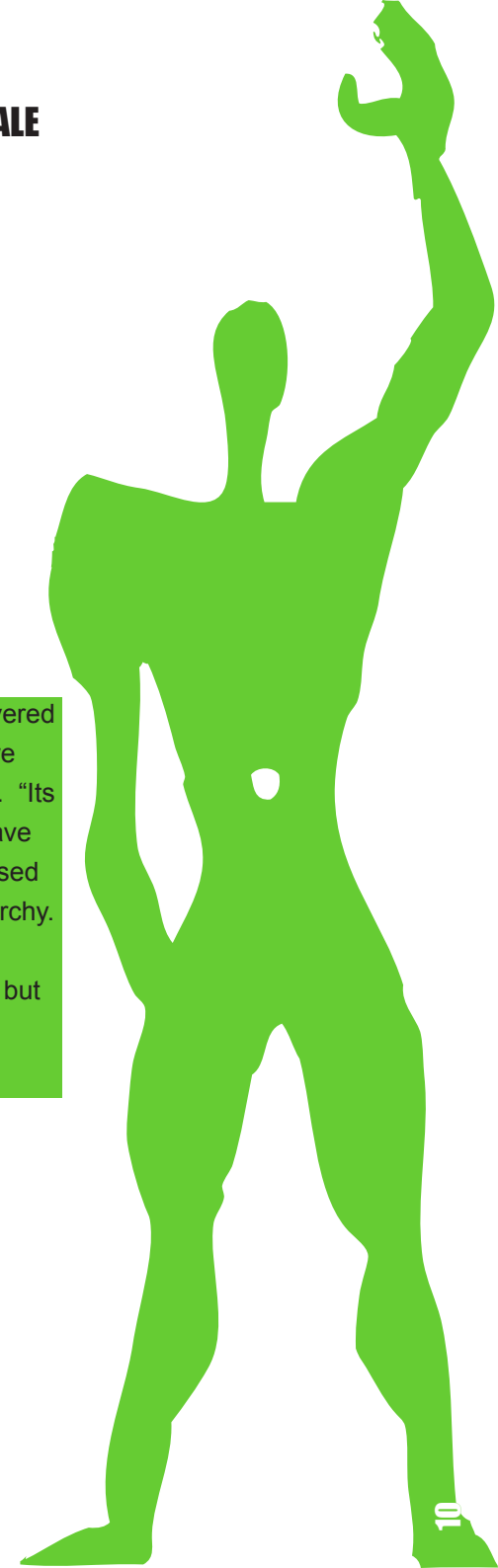
It is important to relate the proportion of buildings, whether it is for habitation by humans or sculptural works, to the proportions of the human body. This is what we are most familiar and comfortable with. Vitruvius, Leonardo da Vinci and Le Corbusier among others examined the human body and its relationship to proportion, geometry, scale and symmetry and its relationship to architectural form and space.

“The human body has always been a revered example for architectonic composition, we can find within it the ideal harmonic form. “Its structural and functional requirements have been answered to perfection and expressed in a fantastic structure of order and hierarchy. Bones, organs, muscles and tissue are structured not only for optimum function, but also for aesthetic fulfilment”.

– Krier

As architects, we should strive to achieve a similar unity between all components of a building.

The proportions of a building do not stop at the site boundary. A successful building will harmoniously settle into its environment and surrounding context.





# DECONSTRUCTIVISM

“Emerging from the theoretical concerns of the past 25 years, Deconstructivism in architecture has very little to do with any given philosophy of design. As originally conceptualized by the French philosopher Jacques Derrida, Deconstruction is a method of inquiry, not a philosophy in and of itself. Derrida’s process emerged out of disenchantment with the idealist legacy of the Enlightenment. He sought to expose the ambiguity of language that in turn led to the loss of meaning in all levels of social interaction”  
-artandculture.com

As architecture has progressed over the years and with new methods of designing buildings made possible through the use of computer software. Architects are challenging traditional and long standing rules and ideals of architectural form. Once there was the presumption that only buildings that followed the somewhat strict rules of composition as outlined earlier in this chapter could be labelled successful. Now, however, there is a great surge in the amount of buildings that go against these rules. That’s not to say all buildings that disregard classical orders of architecture are aesthetically successful, many are not. But there are also many successful ones. Those are typically ones that deal with all of the elements of architectural composition rather than just the overall form.

“The realm of irregular design can only be mastered by extremely talented artists. This may be a warning to all those young architects who think that the spontaneous individual line and liberation from geometry are the pre-conditions for becoming an artistic personality”  
– Krier

## The Dancing House

Frank Gehry & Vlado Milunić  
Completed in 1996

The Dancing house is an example of deconstructivist architecture that expresses the idea of form as function. This unique shape building with its elegant curves is a successful example of deconstructivist architecture that has re-written the rules of composition.

The project reflects a woman and a man dancing together. The building form of the dancing House has a very different concept with the conventional architecture that believe the coherence between all the members are derived from the idea of proportion and symmetry. Throughout the design process, the relationship between its members was considered from the very beginning, resulting in a poetic composition of materials and construction creating an elegant form. The construction of this project required 99 unique concrete slabs, which were required to express the design concepts.

FORM AS FUNCTION



## Guggenheim Museum

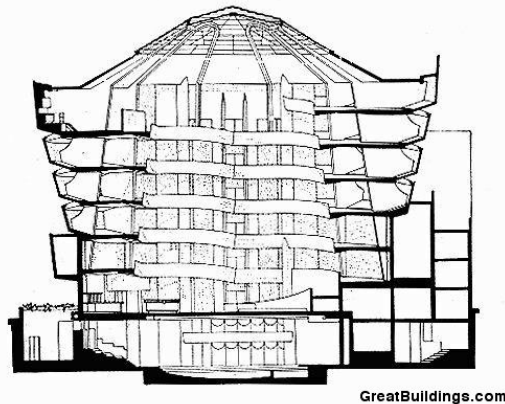
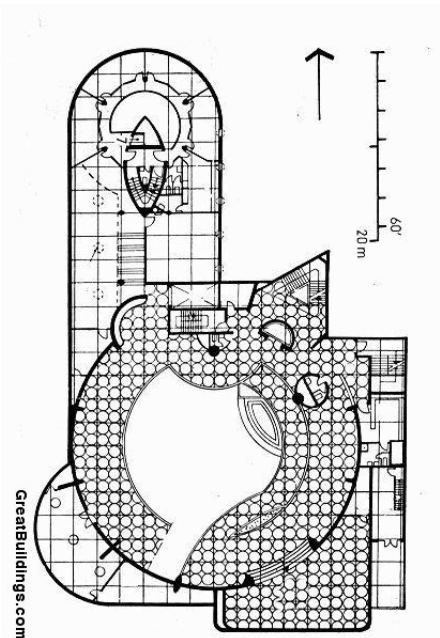
Frank Lloyd Wright

Completed in 1958

The Guggenheim Museum is a classic example of 'Function as Form'. The primary component of the design consists of a spiralling form. This form of a continuous spiral functions as a walkway that allows people to move seamlessly from the bottom to the top viewing the art pieces simultaneously. In section, the main component of the building is asymmetrical. The composition and proportional growth of the spiral ramps allow for a gentle expanding floor plate from floor to floor.

The function of this building completely governs its form and Frank Lloyd Wright accentuated the spiralling nature by playing with the colour composition of the ramps and the soffit areas between each floor to create a gentle shadow line between floors. These elements combined with superb material choices make for a successful building that is timeless.

FUNCTION AS FORM





## Hong Kong High Density Housing

### Various Projects

High-rise buildings are the distinguishing characteristic of Hong Kong Architecture. This occurred as a result of limited available land for development, causing the price of the land to be very expensive. This condition forces developers to build high-density towers to accommodate the people of Hong Kong. These conditions have influenced the building typologies somewhat into a complicated mess of visual noise. They represent 'Function vs. Form', where there has been little thought and design emphasis onto the important aspects of design. It is a complete brutalist approach towards designing high density living towers that are focussed solely on the maximum number of occupants, rather than the comfort and living standard of the occupants. This high density of high-rise towers are not equipped with enough green spaces, which then make the living area, too packed. Several physical and health issue may arise from this type of environment.

These towers typically ignore all conventional rules of aesthetic composition. Apart from the pure form of the square, manipulated to create a rectangle, there are almost no references to classical orders of architecture. Adding to the detriment of the buildings aesthetic quality is the lack of care and maintenance, as well as material choices for the towers. It may well be the cheapest way to design towers, but it sure shows. The challenge for architects designing the next generation of affordable housing is to design quality buildings on an extremely tight budget.





## Unité d'habitation

Le Corbusier

France

Le Corbusier's vision for public living that incorporates the needs and realities of society through the post-war France has been applied in this project. Le Corbusier's theory of five points of architecture that he introduced in the Villa Savoye in 1920, can be seen has been carried forward towards this project. As such, the pilotis concept enables circulation space on the ground plane. The free facades introduce a unique pattern of single and double height balconies that was generated from fifteen different types of apartments. The roof terrace enables residences to have some recreation and enjoy the magnificent view of the buildings surrounds.



This is an example of successful architecture, where the architect has considered all aspects of the design and 'composed' them in such a way that the overall form, function and construction are coordinated and work in a way that compliments each other as opposed to the Hong Kong housing towers. High density is not to blame for the ugliness of the Hong Kong towers, it is the architects and designers. Corbusier had similar problems of densification of people, but through careful planning, was able to design and deliver a successful building.







## City Edge

Canberra

City Edge project is an affordable housing project by ACT Government in collaboration with Community Housing Canberra Limited. The \$6.5 million projects convert a former public housing development into a new inner city mixed density society. The development is dedicated towards low to moderate-income people, which contain 68 apartments, 12 terrace house and 25 town house. The project provides large green space, which show its awareness towards health issue and better living. The building façade design seems to be conventional probably due to the project budget that very limited. The building materiality seems to be treated in a standard way, such as, the wall just covered by different colors of paint. The different colors of paint that it uses create a better impression towards the building appearance. Though the design of the project seems conventional, we believe the quality of living that city Edge offer is still ahead compared with the high-density tower model of Hong Kong.



CityEdge



## Silos Apartment Project

TZG Architects

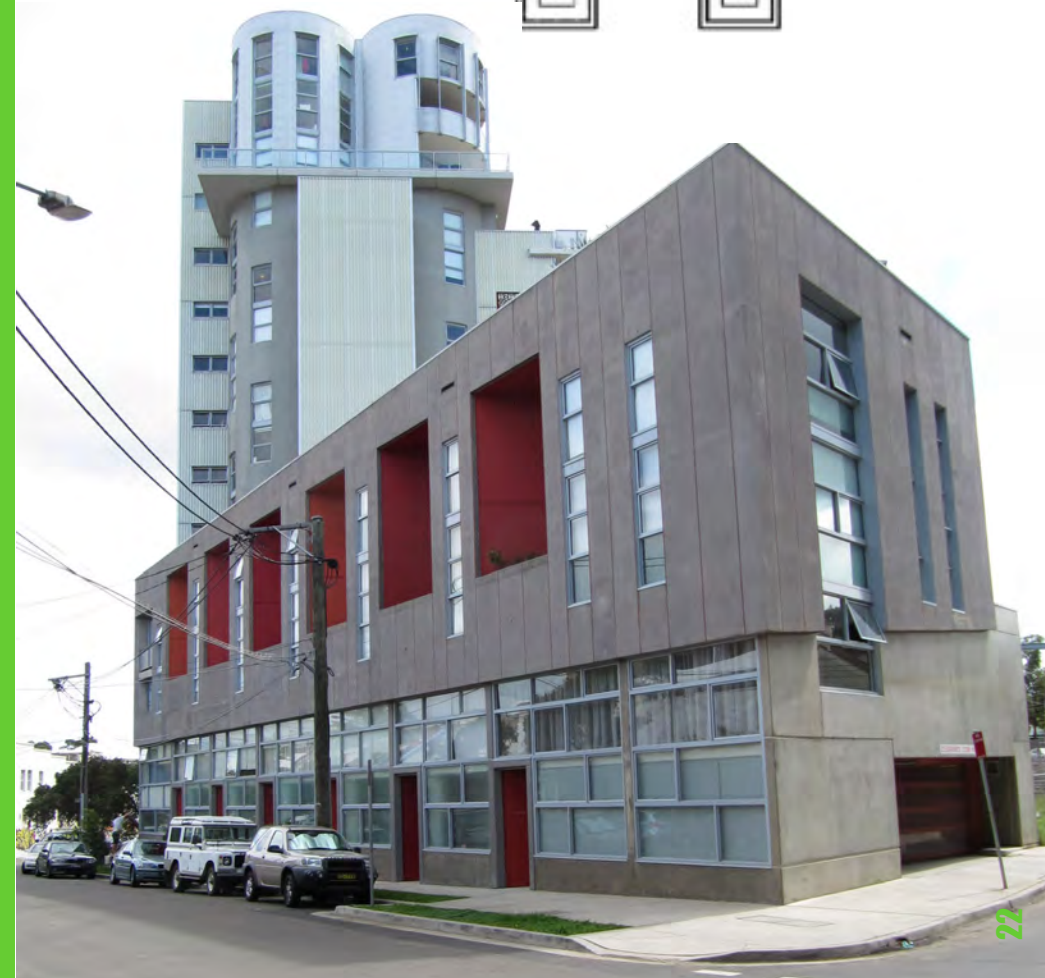
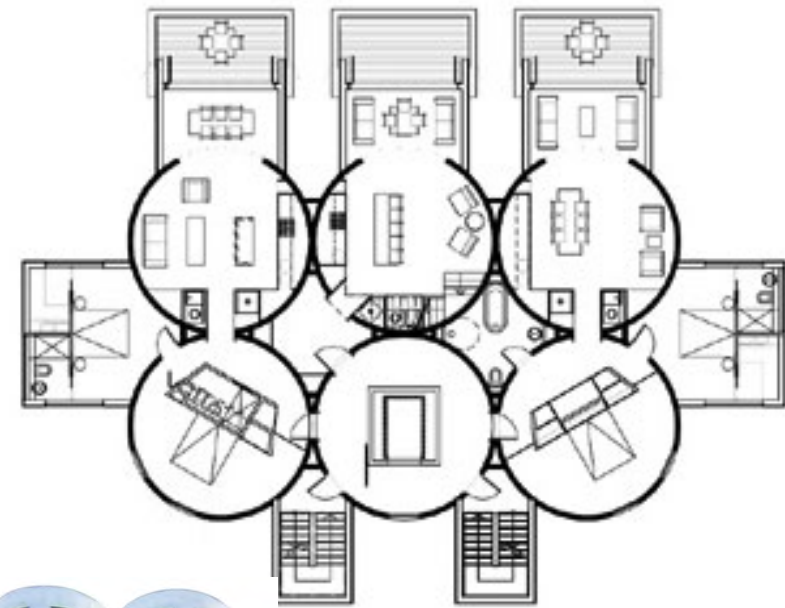
Newtown, NSW

2005

This project is a fine example of adaptive reuse as it involved the conversion of the original grain silos into residential apartments. The choice to include this building in the chapter was a deliberate one as the geometries of this building are superb.

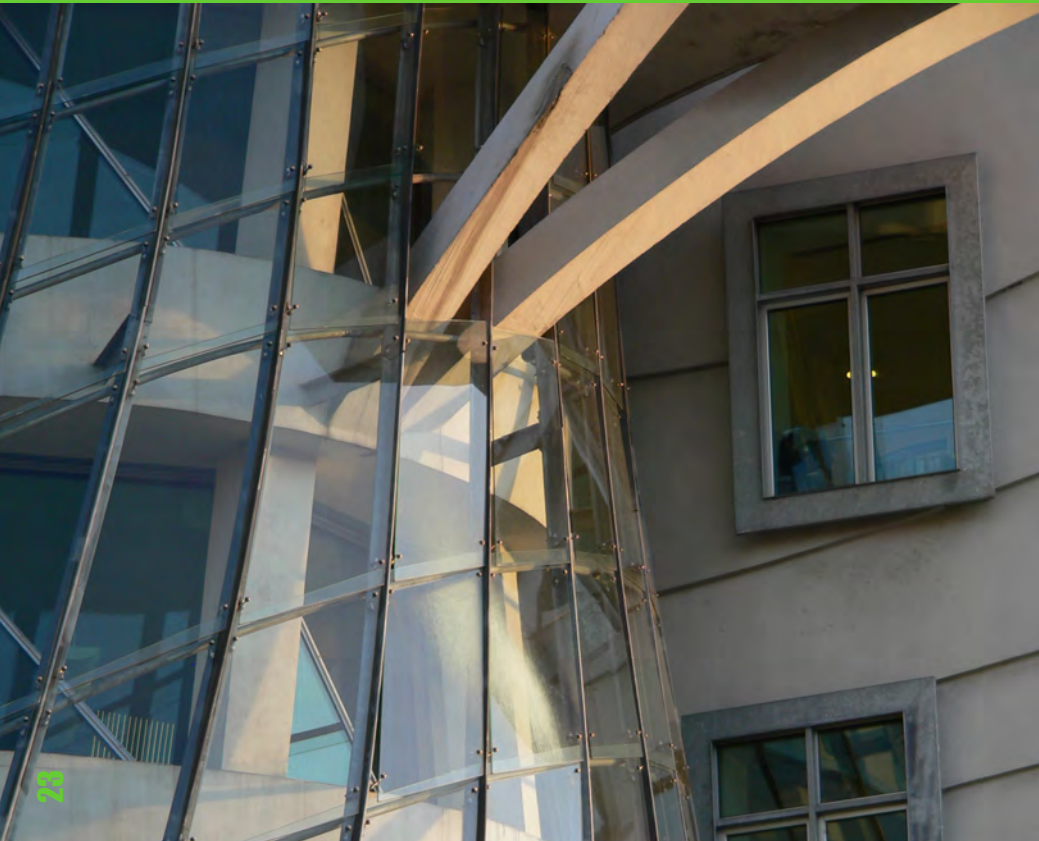
Although the architects did not design this building from scratch and the form was primarily derived from the original building. The way in which they have combined the old and the new geometries is interesting. The way that the two geometries intersect and 'play' with each other in plan compliment and emphasise the overall form of the building form. The careful juxtaposition between circle and square contributes to the success of the building.

Although this building is made up of only two primary shapes, it doesn't however mean it is less formally interesting than that of many deconstructivist buildings. It was through careful planning and design that the culmination of these basic geometries has combined to create a great response to classical orders of archi



# CONCLUSION

Architecture carries an immense influence towards how the environments are seen, felt, and lived. A culmination of successful buildings enables society to experience new environments. These then become their admiration and their expectation. The way architecture can be visually interesting, are completed from collaboration of several basic strategies. The idea simplification emphasizes the concept purely without interference of others. Proportion brings coherence between all elements through considering the Geometry, Symmetry, and the Scale of objects. The organisation of function influences the way building's plan are organised in terms of its functionality. These basic strategies play an important role in generating great architecture. Therefore, Affordable housing project should not sacrifice the design of the architecture due to the limitation of the project budget. Yet, this issue should be taken as a new challenge in defining new types of architecture that answer this needed.



Formalism, as referred to in this chapter and in regard to the NextGen affordable housing strategy research agenda will pose many challenges to the designers involved in the studio. The reason for this will be due to the goal of affordable housing that is to be cheap to build. This, if not carefully managed and every detail of the building is not scrutinized, the cheaper materials that would be necessary to specify in order to keep the construction costs down could possibly be the downfall in the project.

Radical deconstructivist approaches to the design of affordable housing will require a great deal of formal merit for the plain fact that a curved beam is dearer than a straight beam.

Perhaps, to create a successful affordable house, designers need to go back to first principles in order to come up with a design that has been composed well and use economic materials for construction. This will likely result in a variety of dull projects that are uninteresting and lacking in good form. I hope I'm wrong, and the form can overcome the cost.



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